ALAT

#	VALID	TYPE	REG-ID	ADDRESS
n				
n-1				
n-2				
n-3				
n-4				
n-5	1	int	r30	xxyy
n-6				
n-7				
. . .				
2				
1				
0				

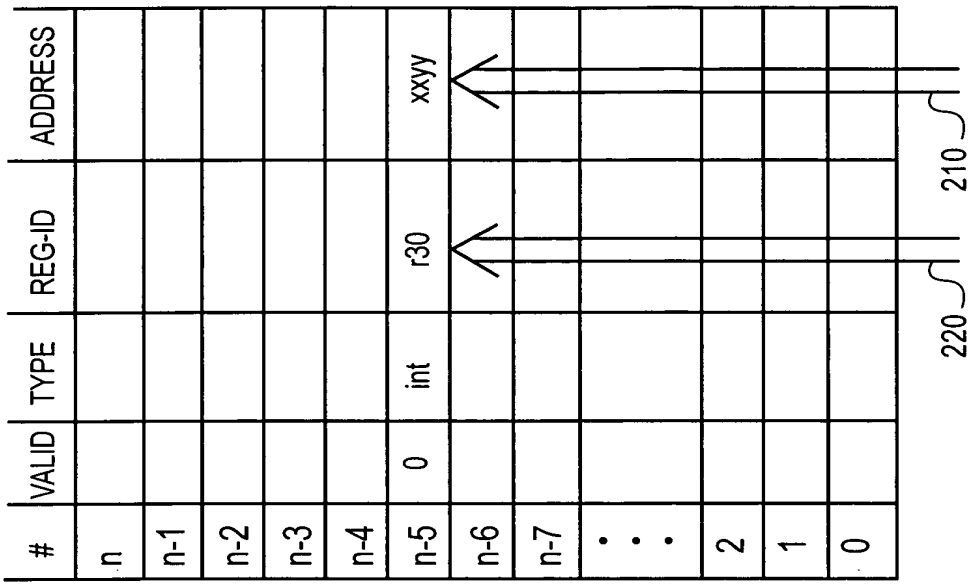
110

ld.a r30 <- [r20]

. . . . .

ld.c r30 <- [r20]

FIG. 1


ALAT
| VALID | TYPE | REG-ID | ADDRESS
n
n-1
n-2
n-3
n-4
n-5 | 0 | int | r30 | xxyy
n-6
n-7
• • •
2
1
0
220
210

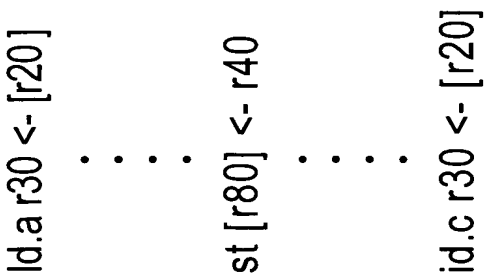

ld.a r30 <- [r20]
• • • •
st [r80] <- r40
• • • •
id.c r30 <- [r20]

FIG. 2

ld.a r30 <- [r20]

•
•
•

ld.c r30 <- [r20]

↓ DECODE ↓

ld.a r30 <- [r20]

•
•
•

ld.c r30 <- [r20], r30

↓ REGISTER RENAME ↓

ld.a rp60 <- [rp50]

•
•
•

ld.con rp80 <- rp50],rp60

ALAT

#	VALID	TYPE	REG-ID	ADDRESS
n				
n-1				
n-2				
n-3				
n-4				
n-5				
n-6				
n-7				
• • •				
2	1	int	rp60	xxzz
1				
0				

310

FIG. 3

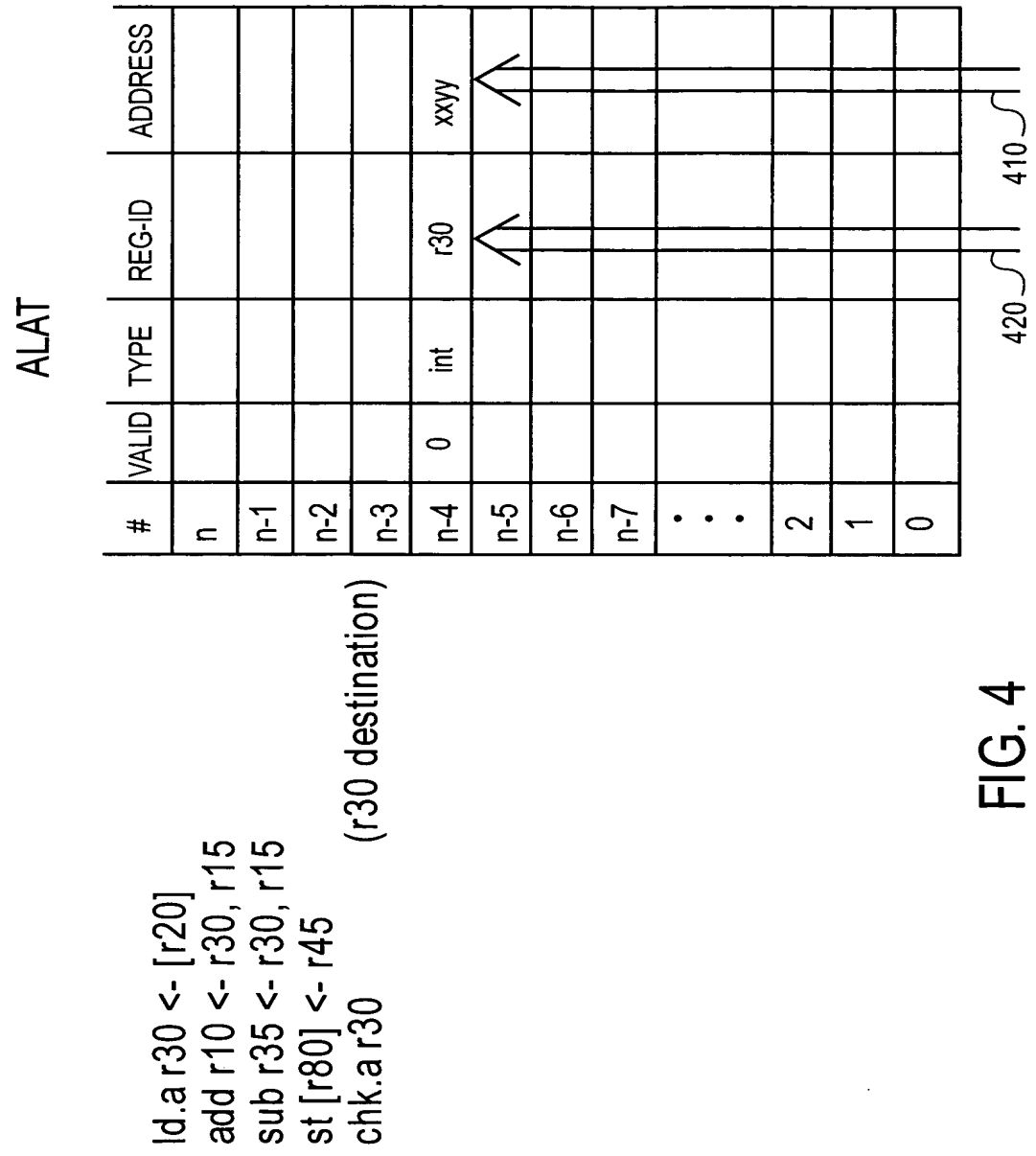

ALAT
| VALID | TYPE | REG-ID | ADDRESS
n
n-1
n-2
n-3
n-4 | 0 | int | r30 | xxyy
n-5
n-6
n-7
• • •
2
1
0
ld.a r30 <- [r20]
add r10 <- r30, r15
sub r35 <- r30, r15
st [r80] <- r45
chk.a r30
(r30 destination)
420
410

FIG. 4

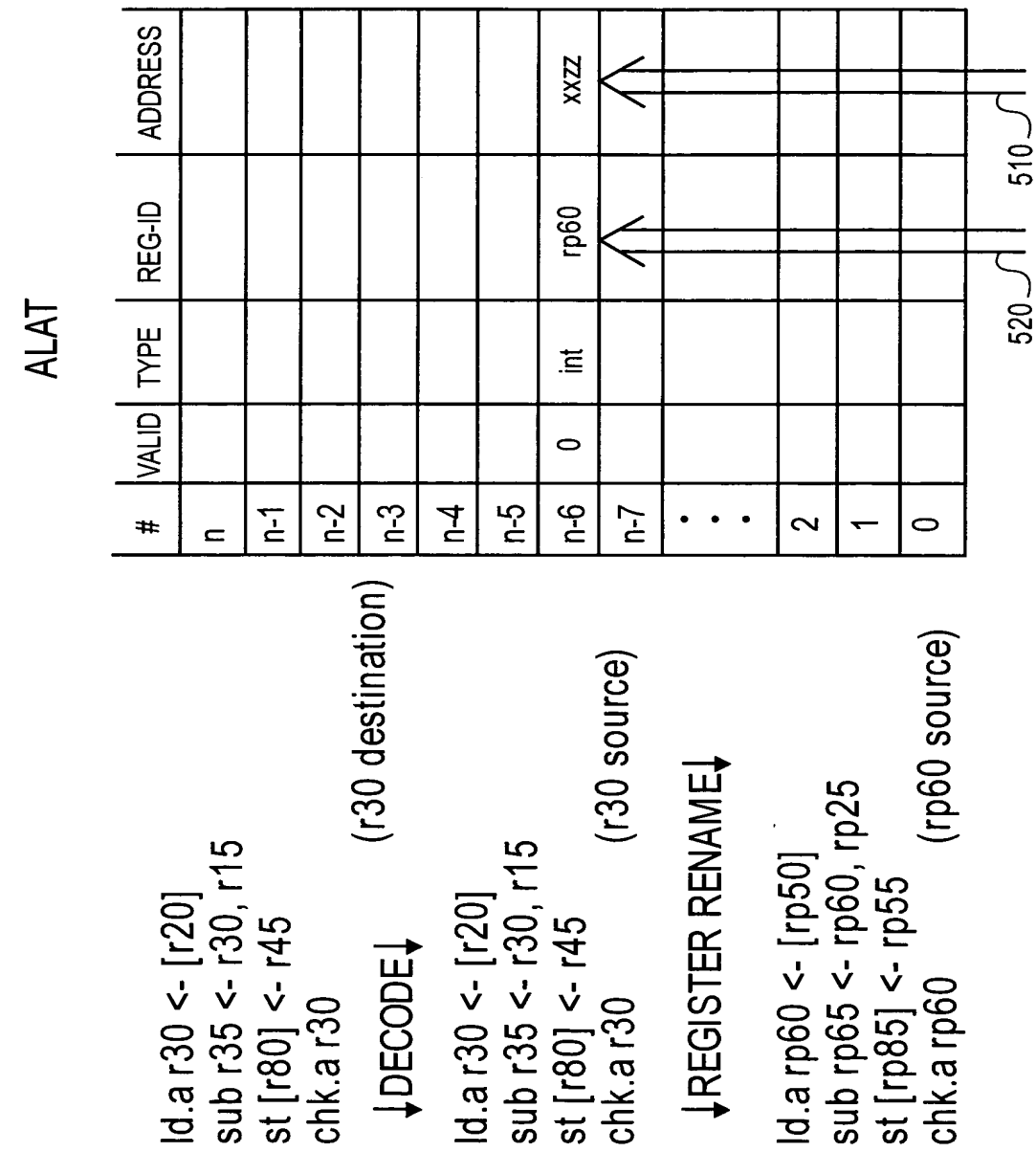

ALAT
| VALID | TYPE | REG-ID | ADDRESS
n
n-1
n-2
n-3
n-4
n-5
n-6 | 0 | int | rp60 | xxzz
n-7
2
1
0
520
510
ld.a r30 <- [r20]
sub r35 <- r30, r15
st [r80] <- r45
chk.a r30
↓DECODE↓
(r30 destination)
ld.a r30 <- [r20]
sub r35 <- r30, r15
st [r80] <- r45
chk.a r30
(r30 source)
↓REGISTER RENAME↓
ld.a rp60 <- [rp50]
sub rp65 <- rp60, rp25
st [rp85] <- rp55
chk.a rp60
(rp60 source)

FIG. 5

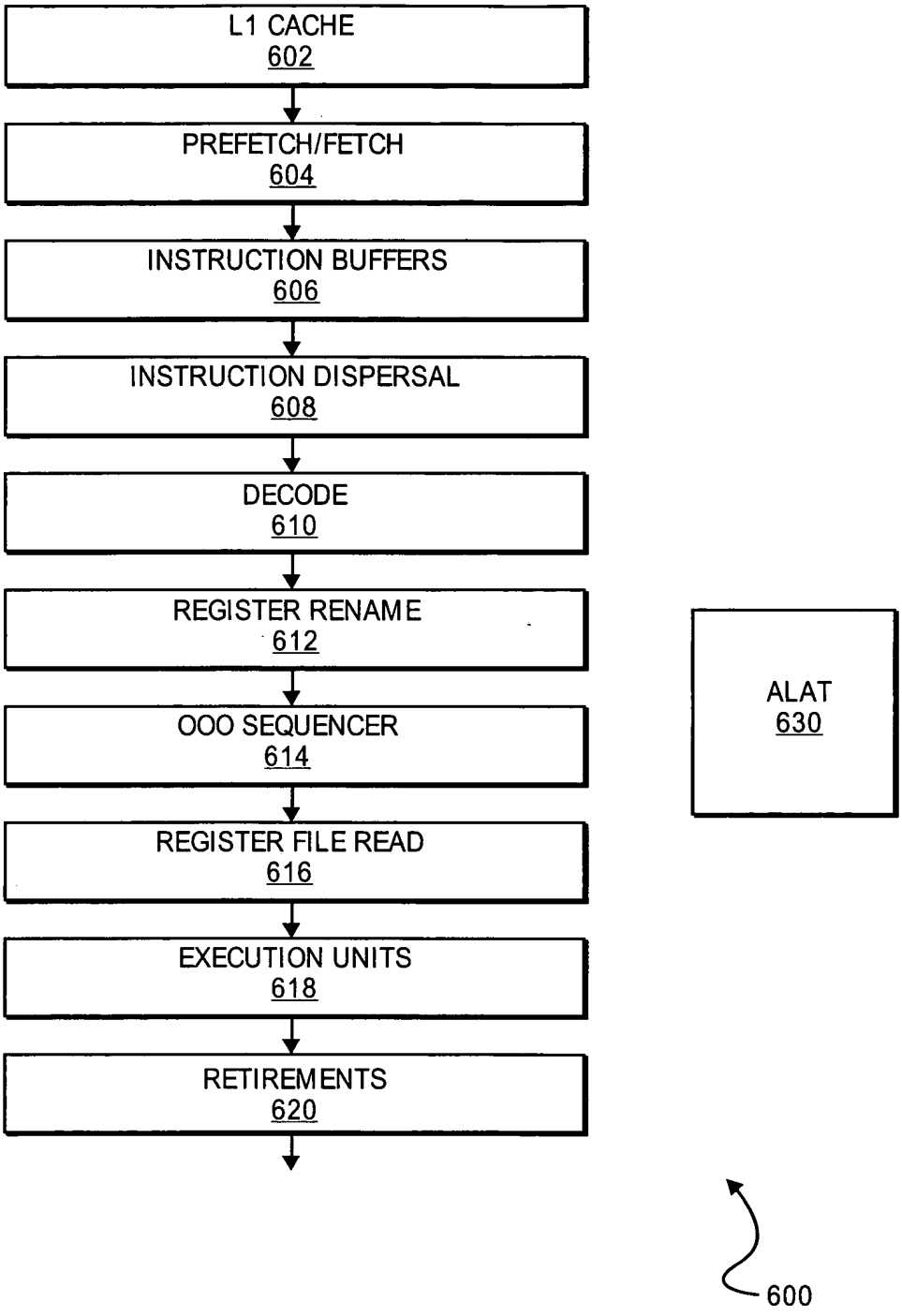

L1 CACHE
602
PREFETCH/FETCH
604
INSTRUCTION BUFFERS
606
INSTRUCTION DISPERSAL
608
DECODE
610
REGISTER RENAME
612
OOO SEQUENCER
614
REGISTER FILE READ
616
EXECUTION UNITS
618
RETIREMENTS
620
ALAT
630
600

FIG. 6

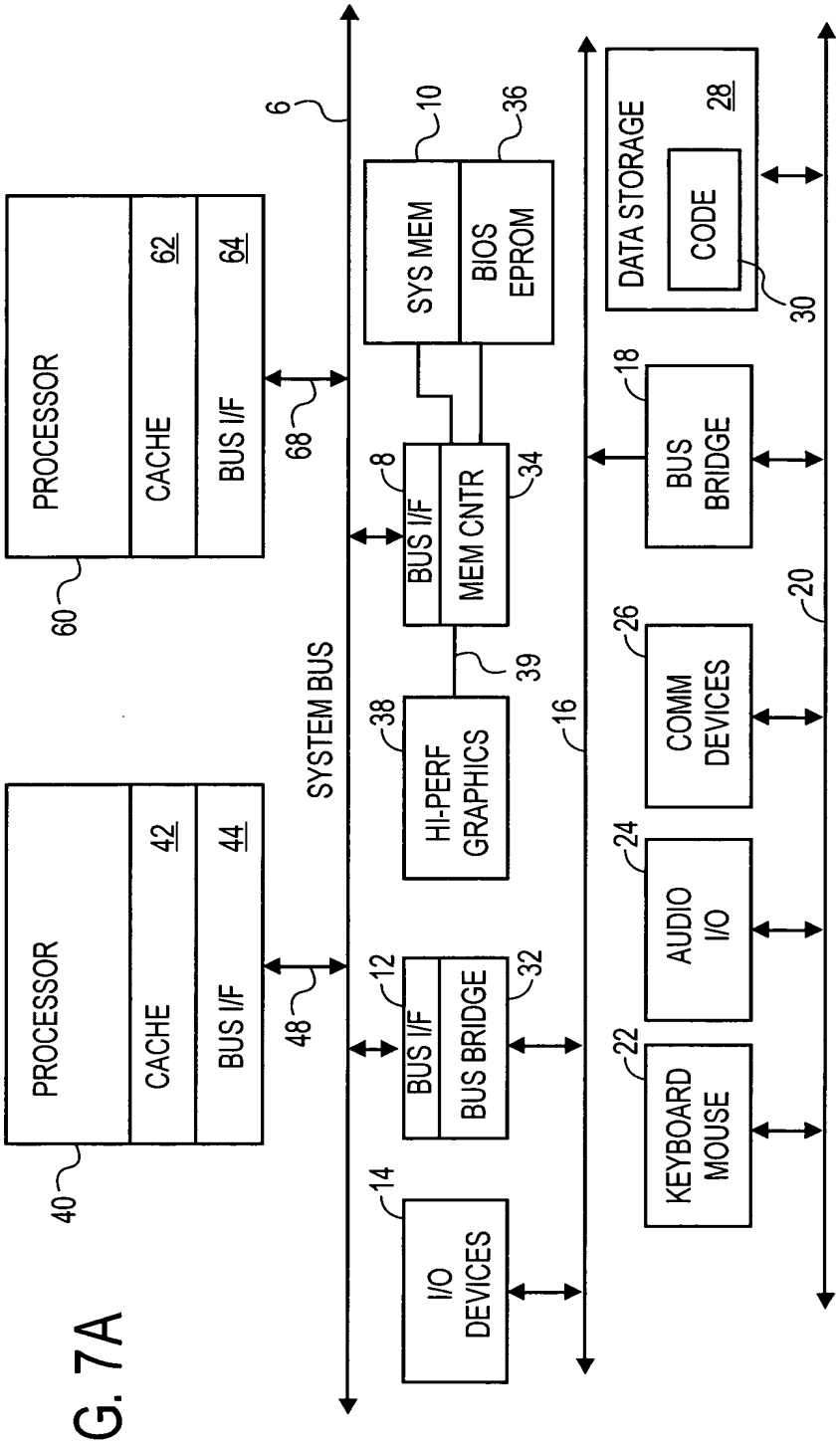

PROCESSOR
CACHE
62
BUS I/F
64
60
68
6
SYSTEM BUS
SYS MEM
10
BIOS EPROM
36
BUS I/F
MEM CNTR
8
34
39
HI-PERF GRAPHICS
38
PROCESSOR
CACHE
42
BUS I/F
44
40
48
BUS I/F
BUS BRIDGE
12
32
I/O DEVICES
14
16
DATA STORAGE
CODE
28
30
BUS BRIDGE
18
COMM DEVICES
26
20
AUDIO I/O
24
KEYBOARD MOUSE
22

FIG. 7A

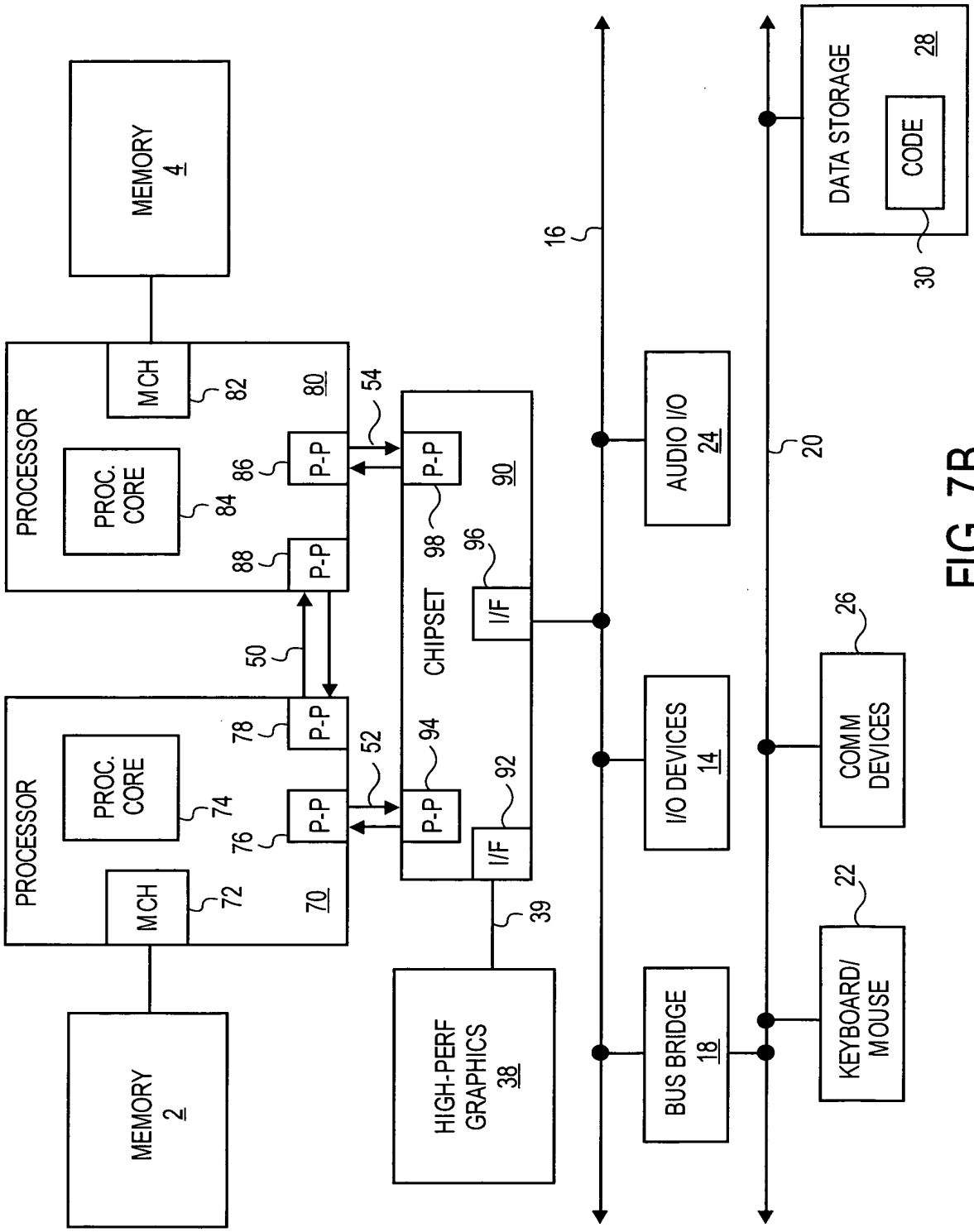

MEMORY
4
PROCESSOR
MCH
82
80
PROC.
CORE
84
86
P-P
88
P-P
54
50
PROCESSOR
PROC.
CORE
74
78
P-P
76
P-P
72
MCH
70
52
MEMORY
2
CHIPSET
90
P-P
98
96
I/F
P-P
94
I/F
92
39
HIGH-PERF
GRAPHICS
38
16
AUDIO I/O
24
I/O DEVICES
14
BUS BRIDGE
18
20
DATA STORAGE
28
CODE
30
26
COMM
DEVICES
22
KEYBOARD/
MOUSE

FIG. 7B